Upon the original specimens, which were in fine condition when received, the disease was manifest as a necrotic condition of the bud, involving also the surrounding leaves and extending for several inches down the stem. In general appearance the symptoms are similar to those caused by *Botrytis*, although the infected areas are darker brown or black. No evidence of external fruiting of the parasite was found either upon the original specimens or upon subsequent artificially infected plants. Several attempts were made to isolate a similar organism from diseased peonies in the vicinity of State College, so far without success. Inoculations of the pure culture into healthy peonies, however, readily produced infections, and the characteristic "blighted" symptoms, from which the organism was reisolated with ease. Inoculations were made upon plants growing out doors with pure culture, using bits of mycelium and zoosporangia, and were successful both with and without wounding of the host. The characteristic symptoms appeared in from three to six days.

The *Phytophthora* in question grows readily upon a variety of artificial media, and in this respect differs from *P. infestans*. The growth is somewhat sparse upon the surface of agar slants, but is abundant beneath the surface.

It has been grown on ordinary beef peptone agar, potato agar, corn meal agar and in beef broth, where it grows luxuriantly submerged but not at the surface. Zoosporangia are produced in abundance and measure 16.7–22.3 μ x 20.4–29.7 μ. These measurements correspond closely to those for the zoosporangia of *P. infestans*[1] but are somewhat broader than those of *P. Thalictri*[2] which would appear to be its closest relative so far as hosts are concerned. Oospores have not been observed either in cultures or tissue sections.

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[1] Rosenbaum, J., *Jour. Agr. Res.*, 8: 233–276. 1917.

[2] Wilson, G. W., *Bull. Torr. Club*, 34: 387–416. 1907.

QUOTATIONS

FAIR WEATHER PREDICTIONS

ONE fixed determination in the office of this *Journal* has been that the monthly issue shall always be ready to go into the mails on the appointed date. The staff has loyally cooperated in this effort, regardless of hours of work. With the notice given in April of an impending strike on the first of May, the matter passed beyond our hands, and when the strike materialized, the record of promptness was effectually shattered.

Fortunately for our peace of mind, the Council of the Society, representative of the membership, had agreed, by formal resolutions adopted at the Rochester Meeting, to wait indefinitely for journals, thereby materially assisting the printer in his stand against what he considered unjust demands from the striking employees.

The labor conditions affected most seriously the hand composition work in the printing office, and this force has been recruited on an open shop basis until it is now greater in number than before. Naturally, men not accustomed to printing chemical articles have had to be developed and trained, so that the new force, at first quite inefficient, is gaining steadily in efficiency. There is now every prospect that the August issue will quickly follow and that the September issue will go into the mails promptly on the last day of August. Pardon anachronisms in the editorials of the July and August issues, in view of the unusual situation.

With all of these troubles upon us, there has been one pleasurable aspect of the situation, the hearty cooperation of both authors and advertisers in the effort to get our work upon a right and permanent basis. Letters received, especially from advertisers, make us feel that there is a strong bond between this *Journal* and its patrons, and we desire here to express our sincere appreciation of that spirit.

One further word only to the authors of papers is added. The preparation of reprints requires a considerable amount of hand composition work and remaking of material. We

urge authors to be extra patient in the matter of receiving their reprints. If the present composition force is diverted to work on reprints, the issue of each of the journals of the society would be delayed to that extent. We have, therefore, taken the liberty of authorizing the printer to postpone the making up of reprints from this *Journal*, and to put all emphasis upon catching up with the regular schedule of publication. We are confident of an extension of loyal cooperation on the part of our contributors.

To adopt the language of the Weather Bureau: "For to-morrow: fair weather."—*Journal of Industrial and Engineering Chemistry.*

SPECIAL ARTICLES

NOTE ON THE USE OF THE DUBOSCQ TYPE OF COLORIMETER FOR THE DEMONSTRATION OF DIFFERENCES IN SURFACE TENSION

Although there are many interesting experiments by which the phenomena of surface tension can be demonstrated to students, as a rule they fail to give a basis of direct visual evidence of the main force concerned. Consequently any procedure which will enable the student to demonstrate to himself in a semi-quantitative manner, that there are differences in the ability of different liquids to sustain themselves by the forces inherent in their surfaces, should assist in an understanding of the underlying principles.

Such a demonstration can be staged by the use of the Duboscq type of colorimeter. Moreover the effects of the additions of minute amounts of various substances to water, on the surface tension of the latter can be strikingly shown.

If that point on the scale at which the dry lower surface of the plunger just comes in contact with the surface of a liquid in the cup or small beaker of about 5 cm. diameter resting upon the cup support is taken as the base line, it is possible to measure with a considerable degree of constancy the height in tenths of millimeters to which the plunger can be raised above the surface of the liquid before the clinging column of fluid breaks contact and slides back into the container. This affords a clear idea of the principle of surface tension from the fact that an obviously weighable volume of liquid is lifted and held above the main surface of fluid by the force of the liquid surface in contact with the plunger.

When a comparison is made of the height to which the plunger can be raised from contact with the surface of such substances as water, ether, absolute alcohol, acetone and toluol, it becomes at once evident that different liquids have different abilities to cling to the plunger surface and hence different surface tensions. When a bit of soap is swished around in the water in the beaker and then removed, the marked decrease in surface force is made plain by the decrease in the height to which the plunger can be raised before contact is broken. A similar result is obtained when a trace of amyl alcohol is added to the water. When a bit of picric acid is dissolved in the water in the beaker the opposite effect is observed and is of sufficient magnitude to demonstrate why picric acid solutions "bump" when heated.

TABLE

Substance	Height in 0.1 mm.	a^2mm^2
Water	40	14.68
Toluol	29	6.72
Acetone	28	6.18
Absolute alcohol	27	5.08
Ether	25	4.61
Water plus soap	36	
Water plus amyl alcohol	33	
Water plus picric acid	42	

The accompanying table shows the values obtained for the substances mentioned. The second column of figures gives the values for the same compounds as copied from Landolt, Bernstein and Roth's tables, 4th edition, in terms of a^2mm^2. The correspondence is pleasingly close, but is of course accidental since contributing factors other than the height in millimeters are obviously involved, though in this group they happen to be mutually compensating.

These few examples suggest the availability of the plunger-cup mechanism as a basis for the development of an accurately calibrated piece of apparatus for the determination of